

according to the present invention. These figures are in respective combination with Figs.1A to Fig.1C. The structures 100 in Fig.1A to Fig.1C are partially or totally perforated by virtue of an impression process in a direction from the top face 12 to the bottom face 14, which forms a plurality of tiny gaps 15 on the structures 102 in Fig.2A to Fig.2C. After the impression process, the structures 100 in Figs.1A to 1C are permanently damaged, forming the structures 102 in Figs.2A to 2C, respectively. As shown in Fig.2A to Fig.2C, each of the gaps 15 comprises two edges physically in contact with each other to form a closed gap 15 when a pressure difference between the two sides of the structure 102 is approximately zero. At that time, the gaps 15 are approximately closed (pseudo-closed) and the surface of the structure 102 has a pseudo-planar topography with multiple phases. When the structure 102 swells due to external pressure, the gaps 15 enlarge and become air permeable, and restore again when the external pressure is removed.

In the claims:

1. (Fourth amended) A composite film comprising:
 - a polymer composite layer having two sides with a plurality of tiny gaps, each of the gaps comprising two edges physically in contact with each other to form a closed gap when a pressure difference between the two sides of the composite film is approximately zero; and
 - a nonstick sealing layer attached to one side of the polymer composite layer to seal the gaps and make the gaps become air impermeable when